Alternative Fuel School Buses

LPG Propane

CNG Compressed Natural Gas

Electricity

TULSA AREA CLEAN CITIES

INCOG

The Clean Cities Mission

Clean Cities coalitions enhance the economic, environmental, and energy security of the United States by working locally to advance affordable, domestic transportation fuels, energy efficient mobility systems, and other fuel-saving technologies and practices.

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Clean Cities Coalitions

Most OEMs make alternative fuel versions of your preferred

IC BUS™

THE LION ELECTRIC CO.

BLUE BIRD®

Thomas™ BUILT BUSES

Benefits of Alternative Fuels in School Bus Fleets

- Fuel prices are lower and more stable than gas and diesel
- Lower operational costs
- Domestic fuel source
- Maintenance cost and issues can be less than diesel
  - No regen, no DPF, no DEF
- Improved air quality, especially around schools
- Better driver and passenger experience
  - Reduced engine noise
  - No diesel smell
- Resilience

Fueling Considerations

Fueling: Propane

LPG Propane

Propane fueling can be built on site for little to no cost, depending on the fuel volume, through partnerships with your local propane marketer.

Fueling: CNG

- Fueling can be built on site, or existing local stations may be utilized.
- State tax credits may be leveraged through public-private partnerships to reduce costs.

If you are considering CNG, call your gas utility to check existing available capacity at your site, and ask about incentives. You can also look for partnerships with existing local stations.

CNG Compressed Natural Gas

Fueling: Electricity

- Fueling should be built on site
- Each bus likely needs its own charger
- Buses charge overnight
- VW funds and tax credits may be available for charging equipment

If you are considering electric, call your local utility to check existing available capacity at your site and ask about incentives.

Electricity

Improve AlternativeFuels with Renewables

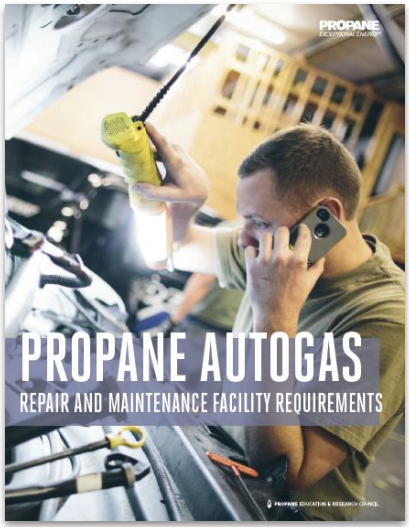
THE COALITION FOR
RENEWABLE NATURAL GAS

Maintenance

Maintenance requirements are different for alternative fuels. Your staff may need additional training, or you may need to rely on your local dealership for maintenance.

Your maintenance buildings MAY need modifications to allow your technicians to safely work on alternative fuel buses.

ALTERNATIVE FUELS
OKLAHOMA DEPARTMENT OF LABOR



Clean Cities Resources

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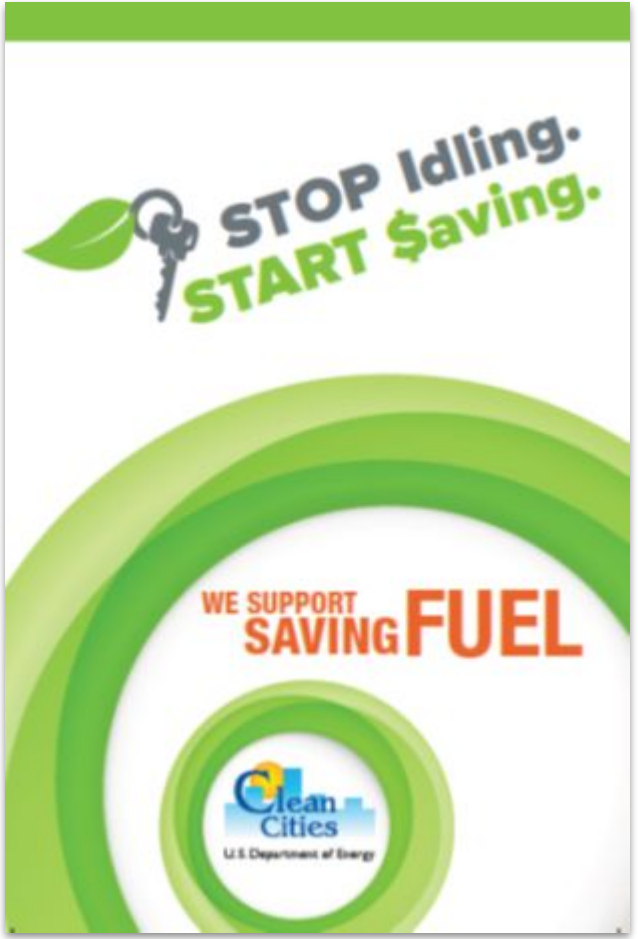
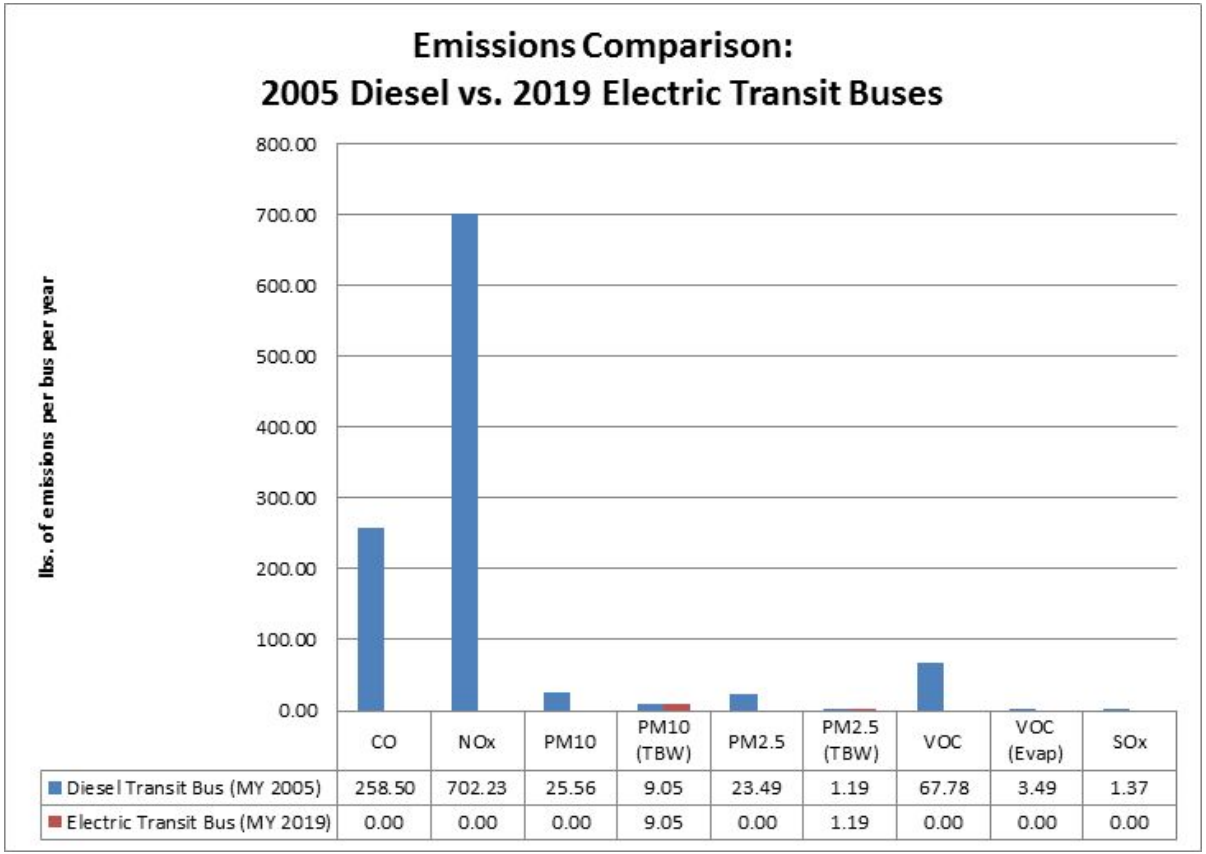
Idle Reduction Plans

- Wastes up to 0.5 gallons of fuel per hour
- Idling a medium-duty truck wastes 0.4 to 0.6 gallons of fuel per hour
- Uses more than 6 billion gallons of fuel at a cost of more than $20 billion EACH YEAR in the U.S.
- Increases vehicle maintenance costs
- Can shorten vehicle life



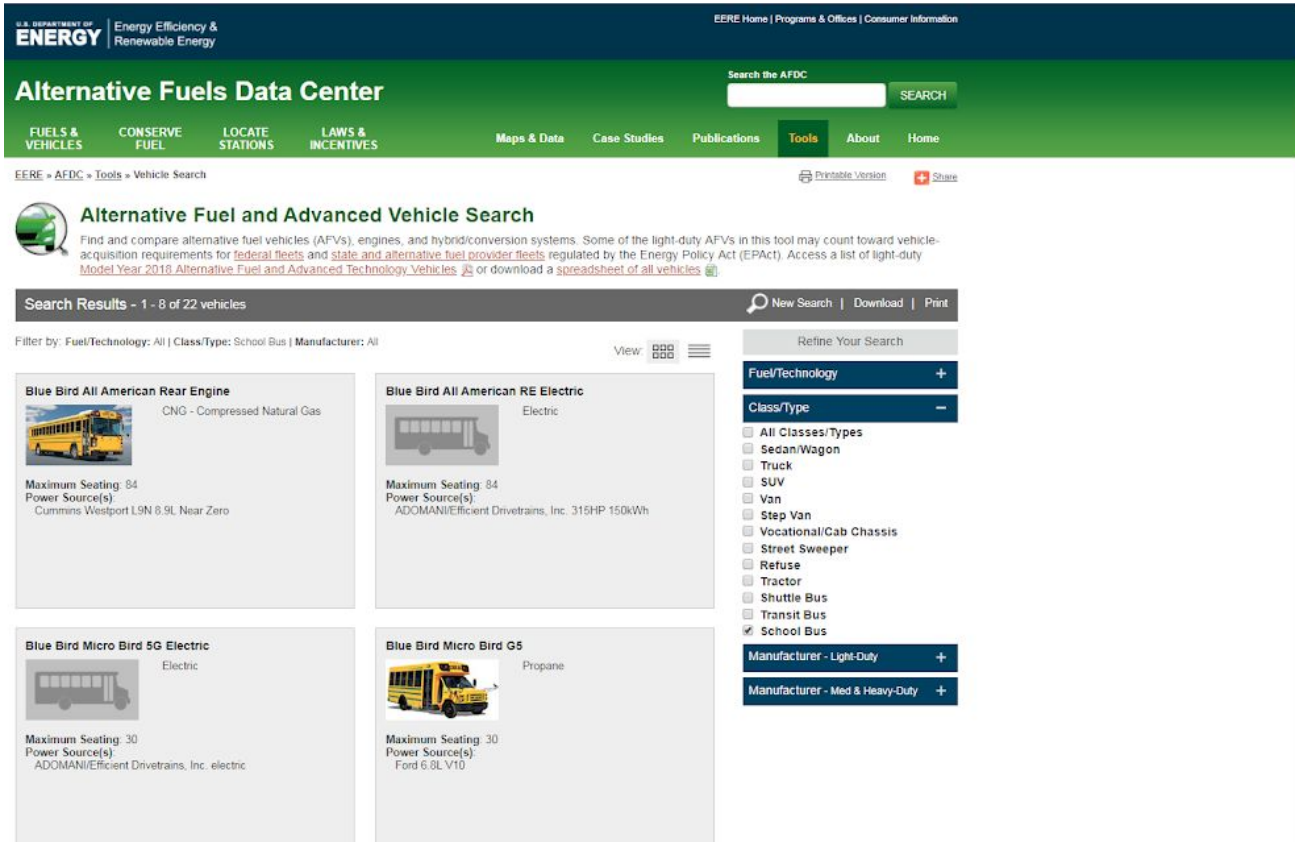
Emissions Reduction Analysis



	CO	NOx	PM10	PM10 (TBW)	PM2.5	PM2.5 (TBW)	VOC	VOC (Evap)	SOx
Diesel Transit Bus (MY 2005)	258.50	702.23	25.56	9.05	23.49	1.19	67.78	3.49	1.37
Electric Transit Bus (MY 2019)	0.00	0.00	0.00	9.05	0.00	1.19	0.00	0.00	0.00

Alternative Fuel Data Center

www.afdc.gov



Innovative Partnerships & Financing

- Local propane companies may be able to provide fuling equipment at no cost
- Leverage state tax credits and grant funding on buses through lease-purchase arrangements
- Public-Private partnerships may allow you to leverage state tax credits for CNG stations which are excluded from VW funding
- Battery lease options are offered by some bus manufacturers to lower the purchase price of electric buses
- Talk with your utility about partnering on CNG or EV charging installations
- Confirm with DEQ that these arrangements are compatible with VW Funds prior to submitting a proposal

Do your homework!

- Alternative fuels have strengths & weaknesses which make certain types more suitable for different use cases and duty cycles.
- Understand the pros and cons of the fuel you are considering.
- Reach out to your Clean Cities Coordinator for a fuel-neutral fleet analysis that can help you make the right choice for **your** fleet.

Contacts

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